DOCUMENT RESUME

ED 045 806 VT 011 743

TITLE	Five-Year Plan for the Department of Industrial Education and Technology.
INSTITUTION	Central Michigan Univ., Mount Pleasant.
PUB DATE	70
NOTE	32p.
EDRS PRICE	EDRS Price MF-$0.25 HC-$1.70
DESCRIPTORS	Articulation (Program), Change Agents, College Programs, *Industrial Education, *Industrial Technology, *Organizational Change, Program Budgeting, Program Descriptions, *Program Improvement, Program Planning, School Organization

ABSTRACT

This 5-year educational plan intends to change the Department of Industrial Education and Technology to a more inclusive program entitled the School of Industry. The purposes of the university, the goals of the department and school and community factors are all considered. The action phase of the program change deals selectively with aspects of curriculum, staff, and facility improvement. A plan for a unified curriculum for both undergraduate and graduate programs of industrial education and industrial technology outlines a course of action to implement the necessary curriculum changes and additions, and provides a budget for its implementation. An organizational pattern compatible with the proposed curriculum structure is presented. A Program Evaluation and Review Technique (PERT) chart illustrates the proposed time schedule for these activities and a proposed budget is given. (GR)

ED0 45806

FIVE-YEAR PLAN
FOR THE
DEPARTMENT OF INDUSTRIAL
EDUCATION AND TECHNOLOGY

for
THE PRESIDENT OF
CENTRAL MICHIGAN UNIVERSITY

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

by
THE DEPARTMENT OF INDUSTRIAL
EDUCATION AND TECHNOLOGY
CENTRAL MICHIGAN UNIVERSITY
MT. PLEASANT, MICHIGAN

PREPARED
SPRING 1970

CONTENTS

PREFACE

PURPOSES, GOALS, AND OBJECTIVES

ACTION PROGRAM FOR THE DEPARTMENT OF INDUSTRIAL EDUCATION AND TECHNOLOGY

ACTION PROGRAM TIME LINE AND BUDGET

PREFACE

The concept of planning has played an essential role in the activities of man since his emergence on earth. Man's progress has been measured by his capacity to anticipate and shape his future. This characteristic is more laudable than merely yielding to external events and internal human reactions of the moment. The success of nations, states, and institutions has been dependent upon man's ability to develop planning capabilities which are vital to them.

The accelerated advance of science and technology has made society so complex and interrelated that planning has become a prominent human function. Planning is now a distinct activity and a recognized field of intellectual and professional concentration. The complexity of business, education, government, and industry has placed an ever increasing burden on those responsible for planning. The traditional short term or yearly plans have been replaced during recent decades by a highly sophisticated form of long range planning. Such planning is based upon premises which include: (1) setting goals and developing strategies for achieving them, (2) translating strategies into detailed operational programs, and (3) assuring that plans are carried out.

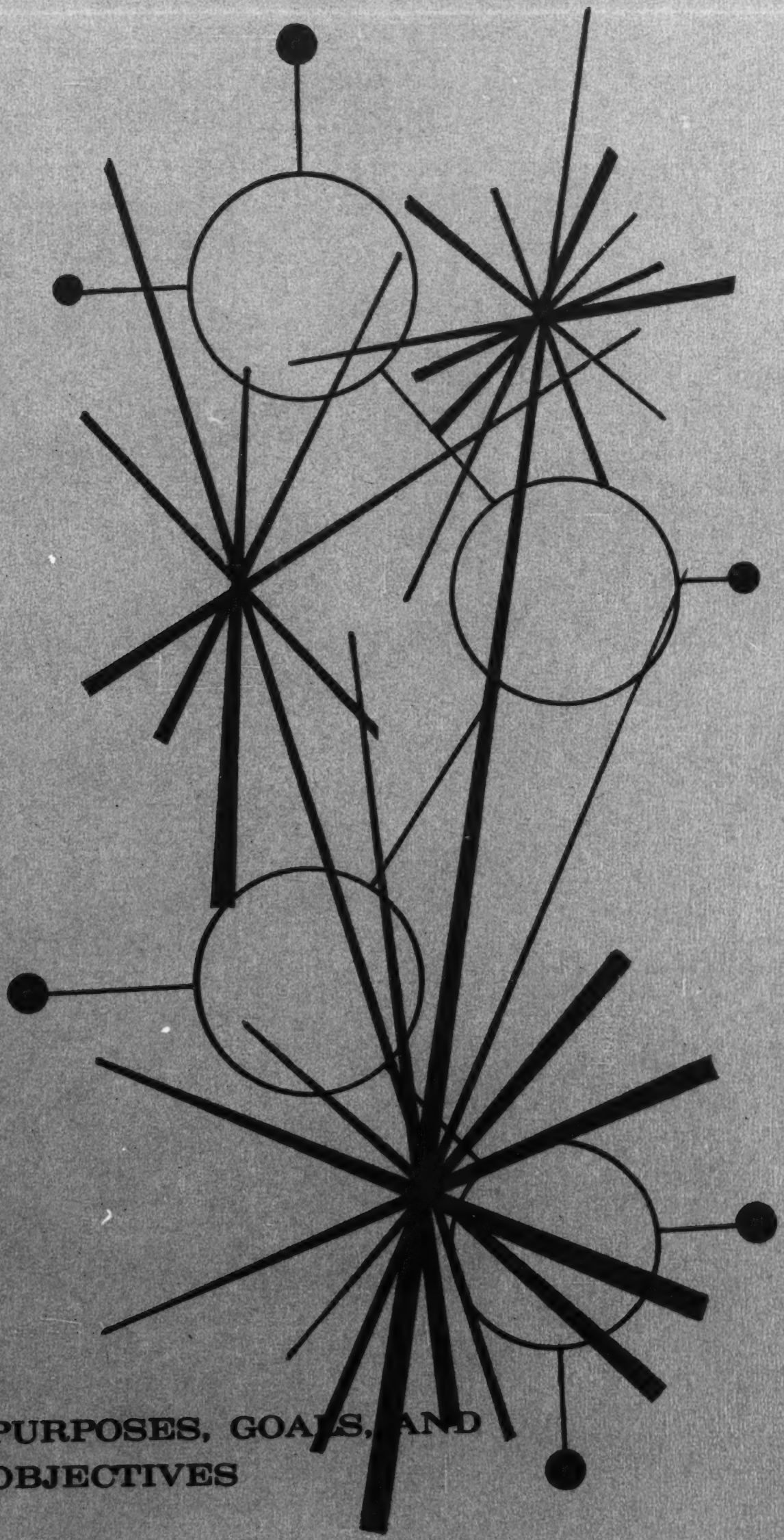
Recent developments in long range planning have involved several key elements. One of these has been the supplementing of detailed budgetary planning with the planning of goals, strategies, and operational programs all having the same degree of specificity. These latter elements have come to include extremely specific items such as daily behavioral objectives in education; the identification, through research, of the stages involved in the change process; and the development of sophisticated planning strategies such as Program Evaluation and Review Techniques (PERT).

These developments in long range planning have lengthened the time period covered by such plans and increased the resources and time devoted to such planning. At the same time there has been a vast increase in the scope of planning as well as in the detail covered by such planning

Long range planning done within any educational institution must, in a cyclical fashion, begin and end with consideration of the basic factors which comprise such an institution: mission, curriculum, personnel, and facilities.

The implementation of curriculums is the core around which the staff and facilities are selected, organized, and operated to carry out the mission of the institution. Long range educational planning must examine the mission as well as the existing curriculums and their revision, the invention of new curriculums, and the phasing out of obsolete curriculums. It must involve the development of a framework for staffing which includes the present and projected staff organizational pattern, the anticipated changes in types of manpower needed during the planning period, and the anticipated numbers of staff members at each level of the organization. It must involve an examination of the existing facilities, the anticipated facility needs in terms of space and characteristics, and alternative ways in which these needs can be met.

The general assumption here is that the curriculum, personnel, and facility of a department should all be directed at the same set of objectives and that they should be compatible at the daily operational level.



PURPOSES, GOALS, AND OBJECTIVES

PURPOSES OF THE UNIVERSITY

Within the system of higher education for the State of Michigan, the Board of Trustees and the University administration have identified four major purposes for Central Michigan University:

1. To provide a liberal education which will engage and develop the intellectual, cultural, and moral capacities of its students.
2. To provide an extensive program of teacher education and experimentation in the science and art of teaching.
3. To provide programs both undergraduate and graduate, terminal and preparatory, which will qualify students for a number of occupations, and
4. To offer graduate instruction, ultimately including doctoral programs in a number of academic areas.

GOALS OF THE DEPARTMENT OF INDUSTRIAL EDUCATION AND TECHNOLOGY

Within the University's stated purposes the Department of Industrial Education and Technology has identified the following goals:

1. To prepare and upgrade professional industrial education teachers for elementary, secondary, and higher education.
2. To prepare individuals for leadership positions in industry and education.

3. To prepare individuals for technological careers in industry.
4. To provide a service function for individuals in the total educational setting.
5. To provide local, state, national, and international leadership in industrial education by serving as consultants, preparing scholarly papers, and conducting research.
6. To provide an opportunity for individuals at the university level to develop an understanding of the industrial aspects of society.

These goals relate to the traditional services provided by members of the professoriate, i.e., teaching, inquiry, and service to the University and the community-at-large. They provide a strong sense of direction by concisely stating the collective mission of the elements of the Department. Embodied in them is a controlled but striving force which seeks growth and increased autonomy. This force seeks to unify the elements of industrial education and industrial technology which have seldom been effectively represented by a collection of related curriculums, which have seldom been effectively housed in a comprehensive facility, and which have seldom been effectively taught by a unified staff. This type of education at the collegiate level stems from many diverse historical fountainheads and the insight, fortitude, resources, and intellectual power which is required to unify it is difficult to muster. This plan, by the present staff, is an attempt to do this task.

ASSUMPTIONS BASIC TO THE FIVE–YEAR PLAN

It is assumed during the period 1970-1975

1. that the School of Fine and Applied Arts will become the College of Fine and Applied Arts
2. that the Department of Industrial Education and Technology will become the School of Industry.

3. that joint faculty appointments can be made for several faculty members between the School of Industry and various other Schools or Colleges.

4. that planning and constructing new facilities for the School of Industry are possible.

5. that a doctoral program which serves potential leaders in both education and industry is feasible and proper for the School of Industry.

6. that by 1975 the enrollment of Central Michigan University will be at or about the 18,500 level.

7. that the study of the societal institution known as industry is a viable basis for enough significant knowledge, in all its forms, to justify its inclusion as a major subdivision in an institution of higher education.

8. that the young people of the State of Michigan will sustain an interest in industrial education.

ASSUMPTIONS BASIC TO THE DEPARTMENT

The previously stated departmental goals are based on numerous assumptions which have been formally and informally stated by members of the department. Some of these major assumptions follow:

1. Industry is one of the dominate forces in society.
2. There will be an increased need for all youth to have a general understanding of industry.
3. There is a basic core of knowledge that is applicable to the preparation of individuals in industrial education.
4. There will be continuing need for industrial education teachers at all levels.
5. The expanded role of industry will create a need for more technicians and enlightened supervisory and management personnel.

6. Community college transfer students will demand new curricula and facilities which build on their previous educational experiences.
7. Urbanization, industrialization, and related social problems will continue to increase.
8. Current industrial education teachers cannot sustain their competency without continued educational experiences.
9. There will be a greater need for industrial education personnel to serve in supervisory, director, coordinator, and consultant positions.
10. Pre-engineering and engineering related courses will receive increased emphasis.
11. There will be a continued effort by departmental members to provide leadership for the field of industrial education.

SUPPORTING FACTORS

The Assumptions stated above provide a basis of operation for the Department of Industrial Education and Technology. While they are not all inclusive, they do provide a sound base for the departmental projection. These assumptions are not made without substantial supporting evidence. The following factors are presented as reinforcement.

GROWTH OF INDUSTRY.

Since the occurance of the Industrial Revolution, industry has played an ever increasingly important role in society. Today, industry and its supporting technologies are recognized as a dominant societal force. It is studied as an individual subject, while at the same time its many ramifications touch upon the life of all individuals. The resulting problems of industrialization, their social implications, and the very nature of industry need study.

INDUSTRIAL PLACEMENT OPPORTUNITIES.

The exploding growth rate of industry obviously greatly enhances the placement opportunities in industry. The needs of industry have been reflected by present and projected demands in the areas of (I) technicians, and (2) supervisory personnel. The recently observed gap between laborer-craftsman and engineer-scientist has widened beyond expectations. The demand for trained specialists needed to serve as supervisors, directors, and consultants in the field of industry and technology has never been greater. For example, in the aerospace industry along, I,300,000 individuals are employed today. More significant is that these people are employed in an industry that did not exist ten years ago.

INDUSTRIAL EDUCATION PLACEMENT OPPORTUNITIES.

Recent statistics from the local Teacher Placement Office indicate a ratio of placement opportunities to industrial education majors at 50 to I. Evidence to teacher shortage is supported by the fact that five cities in the midwest (Chicago, Cleveland, Detroit, Indianapolis and Milwaukee) currently need 334 industrial education teachers. Furthermore, statistics compiled by the USOE indicate that enrollments in industrial education are projected to approximately double in number by I972 in comparison with the figures recorded for I966 (6,466,079 to I2, I06,900). The last Michigan survey revealed that industrial education ranked second on a list of areas in the state with the most critical teacher shortage.

This problem is further compounded by the significant fact that a high number of industrial education teachers are drained off each year by industry.

ENROLLMENT TRENDS.

Current University long range planning is based on a projected enrollment trend involving an annual increment of 7 to 10 percent. It could be assumed that the enrollemnt in the Department would parallel the University enrollment growth; however, departmental registration statistics for the past several years reveal greater increases. For example, the 1968-69 Annual Report indicated that registrations in the Department were up 15.5% over the preceding fall, and up 11% for the preceding spring semester. Current statistics reveal an even greater increase as registrations for the 1969-70 academic year were up 16%. These same figures over the period from 1964-65 through 1969-70 show a departmental registration growth factor of approximately 130 percent.

IMPLICATIONS OF COMMUNITY COLLEGE GROWTH.

The University's decision to further restrict freshman enrollments with the expectation of increased numbers of transfer students will create an ever increasing demand on the Department since approximately 50 percent of transfer students have been enrolled in technical programs. Continued expectations are supported by the increasing number of technically oriented programs in the community colleges and the large numbers of student inquiries relating to our programs. This anticipated increase coupled with regular enrollment increase, provides strong justification for additional departmental personnel. In addition, more complete and upgraded technical facilities for specialized teacher education will be required.

CURRICULUM RESEARCH.

Recent efforts by large scale funded curriculum projects such as the Partnership Vocational Education Program, the Industrial Arts Curriculum Project, and The American Industry Project, have resulted in renewed emphasis on industrial education and have established an identifiable body of content for this field. This makes possible the delineation of content in such a manner that it can better serve the several types of students. The implementation of these several content areas requires a competent staff working in comprehensive facilities.

EXPANDED LEADERSHIP FUNCTION.

The professional leadership role of the Department has shifted during the last five years from a regional orientation to a state and national orientation. This change has resulted in participation in funded projects, national conferences, and high level professional decision making. In 1967, the staff included three menbers with the doctorate. Presently, there are five with a doctorate and it is anticipated that there will be seven by the fall of 1970. It is anticipated that the expanded leadership role will lead to enlargement of graduate offerings and the inclusion of a new doctoral program which would serve both educational and industrial personnel. It is further anticipated that present activities involving the articulation efforts between the Department, community colleges, and secondary schools will be expanded.

ACTION PROGRAM FOR THE DEPARTMENT OF INDUSTRIAL EDUCATION AND TECHNOLOGY

Heavy emphasis in this plan will be devoted to an action program approach. This program is believed necessary and proper in view of present conditions and in light of postulated circumstances which do or may affect the success and growth of the Department. There are three sections to the program, each dealing selectively with aspects of curriculum, staff, and facility improvement. Briefly, the section treating curriculum improvement describes a unified curriculum for both undergraduate and graduate programs of industrial education and industrial technology, outlines a course of action to implement the necessary curriculum changes and additions, and provides a budget for its implementation. In the section dealing with staff needs and organization, an organizational pattern is presented which is compatible with the proposed curriculum structure. The last section covers a proposed facility scheme, time schedule, and budget for the facility.

ACTION PROGRAM: CURRICULUM

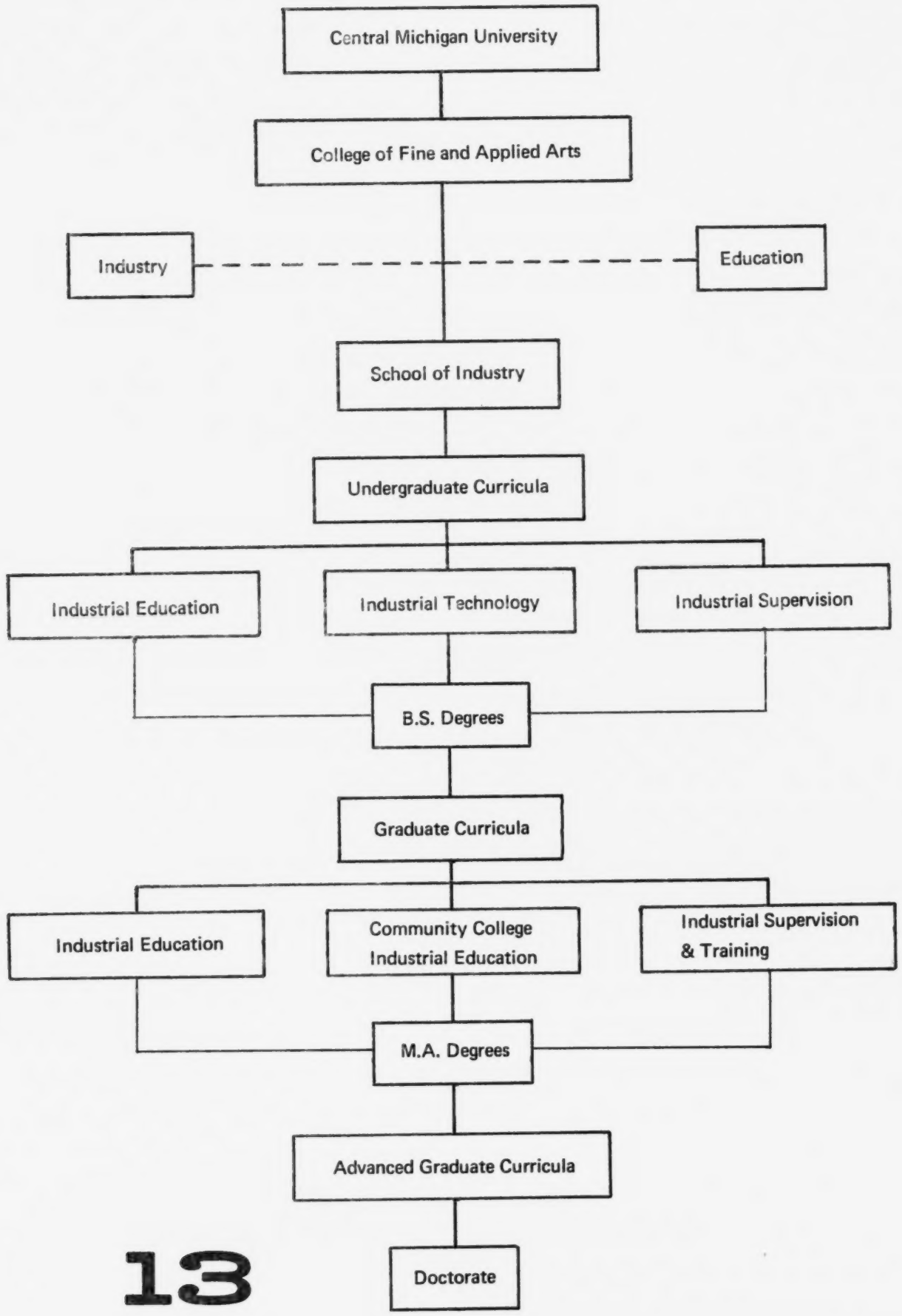
The nature of the Department of Industrial Education and Technology is strongly affected by its relationship with two of our basic societal institutions -- industry and education. Its purposes within an education setting causes its ties to education to be overly visible and allows these relationships to be easily maintained. On the other hand, the relationships with industry are more tenuous partly due to difficulties in maintaining contact between the Department's staff and industrial personnel and industrial settings. The proposed curriculums presented in Figure 1 represent an extensive effort on the part of the total departmental staff to increase and sustain the relevancy of the curriculums to both education and industry.

Figure 1 represents the curriculum structure as it will exist in the last year covered by this plan, i.e., the 1974-75 academic year. Mention should be made that it reflects assumptions stated previously which concern themselves with changing the present departmental organization and title from Department of Industrial Education and Technology to the School of Industry and changing the present School of Fine and Applied Arts to the College of Fine and Applied Arts. Lines between these units and the University structure represent 2-way administrative, financial, and curriculum influences.

Industry and education, the societal institutions, are included because graduates of the Department come from these institutions or leave to work in them. Continuous and active relationships with industry and education are assumed as desirable. These relationships include professional interaction between the departmental staff and personnel in industry and education. Further, interactions are necessary for providing a two directional flow of information, of major importance in keeping the curriculums and the graduates current.

FIGURE 1

PROPOSED CURRICULUM STRUCTURE



UNDERGRADUATE CURRICULUMS.

The undergraduate curriculums of the Department provide for three distinct kinds of students or occupational careers. First, the teacher education curriculum includes an option in the industrial education curriculum which would be appropriate for teachers of industrial arts (elementary or secondary) and another which would be suited for trade and industrial teachers (holders of vocational certificates) or technical education teacher programs (post secondary or community college). A major difference between these two options is that the latter is intended to include provisions for a minimum of two or three years of certifiable industrial work experience. This option allows competency examinations in lieu of technical courses or may involve a cooperative education arrangement with industry if work experience is lacking. These revised curriculums are to be effective during the 1970-71 academic year.

Second, the industrial supervision curriculum is intended for students who plan on taking positions in industry which involve the supervision of subordinates. This curriculum is already in effect.

Third, the industrial technology curriculum is designed for students who plan on employment in industry or technical careers following their graduation. This curriculum likewise has already been implemented.

It should be pointed out that neither the industrial supervision nor the industrial technology curriculum is a duplication of programs being offered in community colleges. However, all three undergraduate curriculums will allow for transfer students from community colleges.

GRADUATE CURRICULUMS.

The graduate curriculums in Figure 1 reflect a slightly different orientation. This shift in orientation should be regarded as that characteristic which uniquely identifies the proposed School of Industry from other similar entities in Michigan's system of higher education. A major difference in the proposed curriculums is that graduates from any of

the three undergraduate curriculums could matriculate into any of the three graduate curriculums and that any of the graduates from these curriculums could enter the proposed doctoral program. Planned flexibility is purposefully provided to allow student involvement in industrial or educational employment without hindering their graduate education.

Students who desire a master's degree and employment in the elementary or secondary schools would pursue the the graduate curriculum in industrial education. This curriculum has relevancy to the demands of this level of education. It is presently being offered.

Those students desiring a master's degree and employment in community colleges would pursue a graduate curriculum having relevancy to the content, methods, students, and setting of lower level collegiate education. It is proposed that this curriculum be initiated during the 1972-73 academic year.

The third graduate curriculum proposed will be designed for those students seeking a master's degree and employment in industrial positions concerned with supervision and training. Implementation of this curriculum is planned for the 1972-73 academic year.

ADVANCED GRADUATE CURRICULUMS.

The capstone of the program in the School of Industry is a proposed doctoral program which will emphasize the development of leadership potential in persons seeking upper level positions in education or industry.

Many industrial education doctoral programs in the State and Nation are directed at the preparation of persons to engage in teaching at the college level. The proposed doctoral program for persons in education will be directed at preparing individuals for leadership positions for the public schools, community colleges, post secondary institutions, and state departments.

Because the purposes and work settings of those persons from industry who might pursue the doctoral program are so variable, no attempt will be made in this plan to outline the specific types of individuals served or the professional leadership situations for which this program is being planned. Nevertheless, focus on the development of potential leadership characteristics will be stressed as it is for educators.

It should be pointed out that the entire proposed doctoral program is to be contained in a component plan now in preparation by the staff of the Department of Industrial Education and Technology. Presently, a survey instrument is being developed to collect nationwide data from institutions which already offer doctoral programs. These data should provide guidelines for the proposed program and serve to identify types of doctoral programs which are oversupplying the employment market or exceeding the demand. The time line for this component is (1) 1970-71, complete survey and prepare preliminary plan, (2) 1971-72, prepare final component plan and curriculum and obtain University approval, (3) 1972-73, obtain State approval, and (4) 1973-74, initiate the doctoral program for educational and industrial personnel.

PROGRAM CHARACTERISTICS.

It is of primary concern to the Department that all programs of study be kept flexible and suitable to the variety of professional goals of students. These curriculums shall continue to meet the needs of several groups of students:

1. Those who are preparing to teach industrial education in educational or industrial settings.
2. Those who are preparing for careers in industry and technology.
3. Those who wish to pursue a career ladder in either education or industry through graduate education.
4. Those who wish to study this area for its general education value.

A major contribution of the Department's total program is the availability of internships in both education and industry for persons in any degree program. These internships will involve real-life, supervised work experiences which will take the individual intern to the limits of his interests and abilities. The amount of time for the internship will vary from part-time to full-time.

ACTION PROGRAM: FACULTY AND STAFF

In analyzing the faculty and staff requirements for the School of Industry it is necessary to review two major factors which have already been presented in this plan.

First, and of primary importance, is meeting the needs of our society and of individuals wishing to pursue work leading to a degree. Enrollment predictions presented earlier reveal that the growth rate of this segment of the University can be expected to increase at a higher rate than it did in the period from 1964 - 1969. Thus, we can expect to exceed the 130 percent increase of that period. Furthermore, continuing increased university enrollments and an influx of transfer students coming from technical programs will spiral departmental enrollments. Increased enrollments will thus place heavy demands on the School of Industry.

Increased enrollments along with new leadership roles assumed by the faculty, lead to a projected increase in faculty from thirteen in 1970 - 1971 to a minimum of twenty-two in 1974 - 1975.

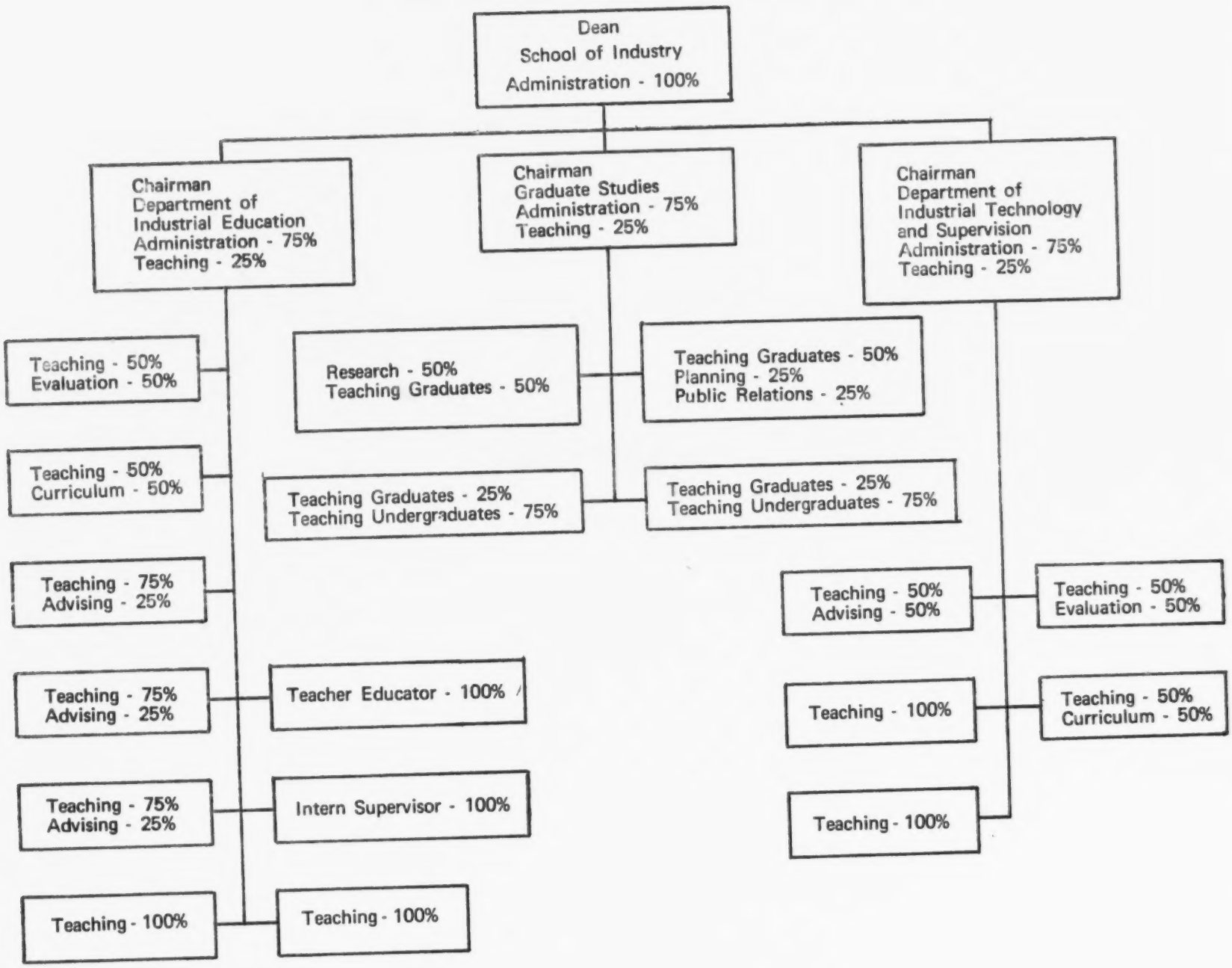
Secondly, new functions of the faculty will require a new type of organizational pattern that allows greater use of differentiated staffing and other concepts related to more effective utilization of personnel. The requirements of the proposed curriculum structure also place a demand on its faculty where each must assume multiple responsibilities and where each will be called upon to function in a manner different from the typical teacher education pattern involving primarily classroom teaching.

Figure 2 illustrates the proposed faculty organizational structure which is to be operational by the 1974 - 1975 academic year and which would be necessary to achieve the goals presented in this plan.

FIGURE 2

PROPOSED DIFFERENTIATED FACULTY STRUCTURE

FOR THE SCHOOL OF INDUSTRY



DIFFERENTIATED FACULTY.

The personnel represented in Figure 2 are those primarily responsible for carrying out the administrative, teaching, and related functions required by projected student enrollments, new curriculum structure, and planned facilities. The basic principles of differentiated staffing will be used to insure the most effective utilization of faculty and to place responsibility for certain functions on specific individuals. This structure does not reflect required positions for technicians; clerical and laboratory assistants; nor other personnel required within the proposed framework for the School. Need for such personnel, however, is outlined in later portions of this plan.

In reviewing Figure 2, it should be noted that an attempt has been made to match professional expertise in the School with specialized functions required of a program which makes a significant effort toward meeting the needs of youth for the Twenty-first Century. The major functions of such a program include administration, teaching, evaluation, curriculum development, supervision, and student advising. While each faculty member is seen as playing an important role in each of these functions, specific individuals will be responsible for coordinating, directing, or conducting activities to insure the successful completion of the particular function. The major portion of the administrative function, for example, will be carried out by the Dean of the School and three departmental chairmen. The chairmen will also have a teaching responsibility to insure that they are continually in touch with the needs of the students and the direction and operation of their programs.

The basic functions performed by the Departments of Industrial Education and Industrial Technology and Supervision are quite similar, but their orientations may vary considerably since one is concerned primarily with educational and the other with industrial employment perspectives. Although much of the teaching will be common to both departments, faculty responsibility will be in one of the two departments. Each department will have an individual with 50% of his assignment directly related to evaluation.

In carrying out this function, the faculty member will be responsible for program objectives and outcomes. In this respect, data related to teaching effectiveness, evaluation, students, program cost analysis, and curriculum appraisal will be studied. There will also be an individual with specific responsibility for curriculum planning and development in each Department.

In the area of advanced graduate study, University support for the proposed doctoral program will have an affect on this structure as three faculty positions will be needed for minimal operation. Additional support of the doctoral program will also be required in the form of graduate assistants. This staff option will provide great flexibility in the operation of the School's departments.

In Graduate Studies some of the faculty will have teaching responsibilities in the other departments, but their main concern will be with the graduate program. Their functions will vary from those faculty members solely responsible for undergraduate activities, for such functions as advising and teaching at the graduate level will take place on a more individualized basis.

As projected, the advanced graduate curriculum will provide positions for six doctoral students on a half-time basis.

Functions related to research, planning, and public relations will be coordinated by this area for the entire School.

SUPPORTING STAFF.

The degree to which a professional faculty can effectively carry out its functions is highly dependent upon the capabilities of supporting personnel from the clerical, secretarial, and technican classifications. Emphasis will be placed here on utilizing the following full-time supporting personnel in the most effective manner: Executive Secretary (4), Receptionist (1), Bookkeeper (1), Typist (4), Technician (maintenance, fabrication, reproduction, multi-media) (4), Clerk (supply, office) (3), Assistants (laboratory, graduate) (10).

Better utilization and more effective use of the computer could affect a change in need for supporting personnel.

The importance of university growth (size and function) and the role of the School of Industry within the University have been stated earlier in this plan. This role is of particular importance as evidenced from results achieved among other institutions in the State. Eastern Michigan University, Western Michigan University, Northern Michigan University, and Wayne State University have already completed new laboratory facilities or in the latter case, will have finished by 1972. While Central Michigan University has been able to maintain its position as one of the most productive institutions in terms of graduates in industrial education, it is doubtful that this distinction can be maintained without new facilities. Nationally, it ranks in the top 20, again in terms of annual graduates, and nearly all of the other 19 institutions have new facilities.

The present facilities were designed for a smaller enrollment base, a much smaller staff, and a program that was entirely teacher education. Today's students represent a group with more diverse occupational goals. Simply stated, the Department now serves teachers, technologists, and supervisors. It is necessary, then, that the School provide offerings including a broad-based understanding of industry and its functions. In addition, instruction and technical laboratories in our new community colleges have placed a greater need for advanced technical laboratories at the University. The fact that community colleges have a heavy technical orientation, also supports the need for advanced studies in these areas.

Planning for such a building program involves five major factors which must be considered in determining space needs. These are: number of students to be served, size of equipment to be used, storage requirements, office space, and teaching methods to be employed. For example, the size of contemporary equipment requires three to four times the floor space previously utilized by school-shop equipment. This problem is compounded by the needs for accessory, component, and control storage. Additional curriculums and a change in staff function require individual offices for advising, counseling, planning, and writing. Teaching methods, also, require a change in the character and amount of space needed for instruction. Mass instruction areas, seminar rooms, study carrels, micro-teaching facilities, and simulation areas all place special demands upon the facility design.

OTHER PERSONNEL.

The full time faculty and supporting staff will provide primary impetus for the operation of the School. The total effectiveness of its program, however, will be greatly influenced by the impact of other individuals from industry, community colleges, secondary schools, and other segments of this and other universities. A partnership will be maintained through a network of working arrangements, joint appointments, and cooperative ventures. It is planned that a "true partnership concept" will be implemented in this respect with input both to and from the School.

ACTION PROGRAM: FACILITIES

The preceding sections dealing with action programs for curriculum and staff present a futuristic plan. Such a plan can only be implemented in compatable facilities. This plan is directed at sustaining a comtemporary industrial education program that has as a basic component an activity program which is aimed at technological and professional competency. In developing plans for a projected facility it is necessary to examine existing facilities and influencing factors which will affect planning decisions.

The existing facilities, which are approximately twenty-five years old, are not capable of the flexibility and adaptability necessary to carry out a contemporary industrial education program. This is an especially crucial factor when it is remembered that multi-phased undergraduate and graduate programs are projected which range from initial preparation of teachers, technologists, and industrial supervisors to advanced graduate study for these same persons.

PLANNING STRATEGY.

There have been several recent developments in the area of facility planning which have been accepted for use in the preparation of a component facility plan. For example, PERT charts are now available covering the construction of new community college facilities. Some of these have identified as many as 1500 separate activities that should be considered in facility planning. The Center for Vocational and Technical Education, Ohio State University, has developed a set of sixteen data collection instruments which aid in the writing of educational specifications. These are specifications which provide the architect with features required to implement the curriculum structure desired. The $20,000 planning funds requested for the 1970-71 academic year will be used to apply these and other tools to the task of deriving a component facility plan.

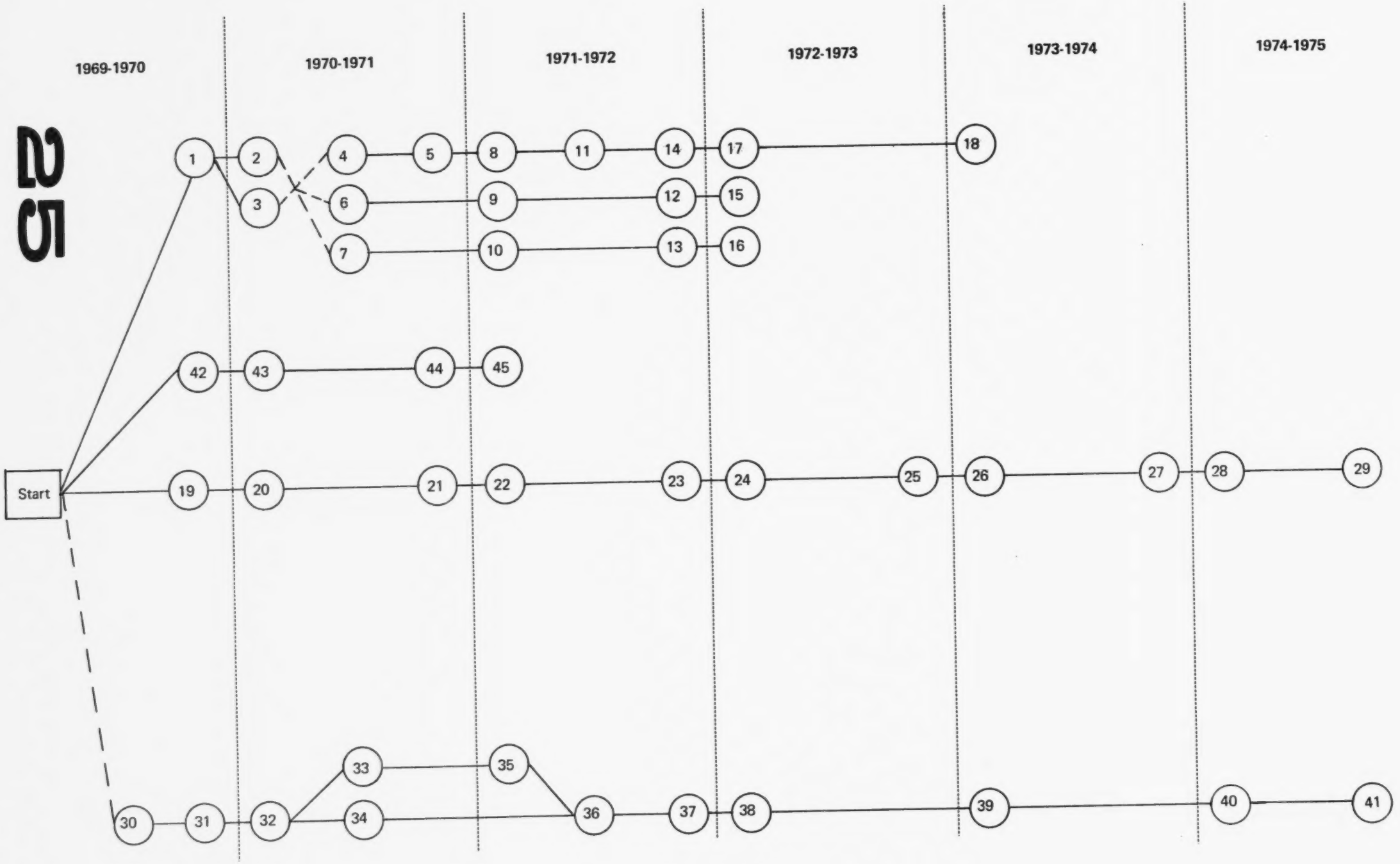
ESSENTIAL FACILITIES.

Since the projected educational facilities for the School of Industry will extend beyond the duration of the present plan, the total space requirements must be based upon more distant needs. This was kept in mind when recommending the following features:

1.	Technical Laboratories	-	18
2.	Classrooms		
	a. Seminar rooms	-	4
	b. Auditorium (300-500)	-	1
	c. Regular	-	4
	d. Micro-teaching rooms	-	2
3.	Speciality areas		
	a. Conference	-	1
	b. Study carrel areas	-	1
	c. Storage rooms	-	20
	d. Reception area	-	1
	e. Reproduction	-	1
	f. Records & files	-	1
	g. Staff Lounge	-	1
	h. Student Lounge	-	1
4.	Offices		
	a. Faculty	-	35
	b. Graduate Assistants	-	10
	c. Clerical	-	4

ACTION PROGRAM
TIME LINE AND BUDGET

The determination of when planned actions should take place is a major factor in modern long range planning. For this plan a simplified PERT chart has been utilized to illustrate major activity packages which comprise the actions outlined in this plan. Contained in the chart are major time lines which cover the action programs for curriculum changes, faculty staffing, and facility construction. In addition, a minor time line is included which covers two name changes: School to College and Department to School. At this writing the times for the several activity packages are considered firm. This is an essential consideration if the plan, as presented, is to be completed on schedule. However, it should be realized that some items covered on the chart could be completed earlier than indicated depending on available resources and manpower.


1969-1970
1970-1971
1971-1972
1972-1973
1973-1974
1974-1975
Start
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45

PERT Chart

PERT SCHEDULE

1. Prepare the Department's copy for 1970-71 University bulletin.
2. Publish new course numbering system
3. Publish new course clustering system
4. Conduct national survey relative to proposed doctoral degree program
5. Tabulate and report the data from the national survey
6. Prepare curriculum for proposed master's degree program for community college personnel
7. Prepare curriculum for proposed master's degree program for industrial supervision and training personnel
8. Prepare curriculum for proposed doctoral degree program
9. Obtain Department's approval for master's degree program for community college personnel
10. Obtain Department's approval for master's degree program for industrial supervision and training personnel
11. Obtain Department's approval for doctoral degree program
12. Obtain University approval for master's degree program for community college personnel
13. Obtain University approval for master's degree program for industrial supervision and training personnel
14. Obtain University approval for doctoral degree program
15. Offer master's degree program for community college personnel
16. Offer master's degree program for industrial supervision and training personnel
17. Obtain approval of Department of Education for doctoral degree program
18. Offer doctoral degree program for educational and industrial personnel
19. Hire two doctorate holders and one graduate assistant
20. Determine Department's staff needs for 1971-72

21. Hire one faculty member and two graduate assistants*
22. Determine Department's staff needs for 1972-73
23. Hire one faculty member and three graduate assistants*
24. Determine Department's staff needs for 1973-74
25. Hire one faculty member and four graduate assistants*
26. Determine Department's staff needs for 1974-75
27. Hire one faculty member and six graduate assistants*
28. Determine Department's staff needs for 1975-76
29. Hire necessary faculty and graduate assistants
30. Initiate component facility plans
31. Prepare request for facility planning money
32. Conduct study to determine educational specifications
33. Outline component facility planning activities in detail
34. Establish equipment specifications
35. Coordinate facility plans with architect
36. Select final building plans
37. Accept bids for facility
38. Commence construction
39. Continue construction
40. Complete construction
41. Accept facility from contractor
42. Recommend name change from School to College
43. Obtain University approval for name change
44. Recommend name change from Department to School
45. Obtain University approval for name change

*Numbers indicated here are projections and are subject to change based on the results of Activities 20, 22, 24, 26, and 28

After the consideration of when planned actions should take place the cost of each activity package was analyzed. The expenditures which were estimated are shown in the following budget. It should be noted that activities in a given year may be either concurrent with or precede the indicated expenditure. Further, it should be realized that some activities can be carried out without any additional expenditures beyond the regular annual allocation.

PROPOSED BUDGET

		1970 - 1971	1971 - 1972	1972 - 1973	1973 - 1974	1974 - 1975	TOTALS
CURRICULUM	Activity	2,3,4,5,6,7	8,9,10,11,12	15,16,17	18	---	
	Cost	$250	$2,000	$500	$250	---	$3,000
STAFF	Activity	20,21	22,23	24,25	26,27	28,29	
	Cost	---	$18,000	$21,000	$25,000	$32,000	$96,000
FACILITIES	Activity	32,33,34	35,36,37	38	39	40,41	
	Cost	$2,500	$20,000	$2,000,000	$2,000,000	$1,000,000	$5,022,500
	TOTALS	$2,750	$40,000	$2,021,500	$2,025,250	$1,032,000	$5,121,500